



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D4842-1

Job Sheet 164956

5002368



Part No: D4842-1

Job Qty: 4 ea

Part Name: Lower Cutter Deflector



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 9/30/17

Job Tracking No:

Due Date: 10/31/17

Created By: Mario Poulin

Type: Stock

Description:

Note: DWG REV B SHEET 2 IPP REV:A 13.04.26 NEW ISSUE DD VERF:JLM IPP REV:B PROCESS CHANGE
13/10/29 JFS VERIFY BY: JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Due Date	Standard		Workcenter/Supplier	
				Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time
90	Start up Operation	4 Ea	10/30/17	0.00	0.00	Start up container	
100	Bandsaw	4 pcs	10/30/17	0.00	0.00	Bandsaw1	
110	CNC Vertical Machining	4 pcs	10/31/17	0.00	1.89	HAAS 1	
120	QC	4 pcs	10/31/17	0.00	0.00	QC2	
130	QC	4 pcs	10/31/17	0.00	0.00	QC8	
140	Outsource	4 pcs	10/31/17	0.00	0.00	Outsource4	
150	Packaging	4 pcs	10/31/17	0.00	0.00	Packaging2	
155	QC	4 pcs	10/31/17	0.00	0.00	QC5	
180	Packaging	4 pcs	10/31/17	0.00	0.00	Packaging3	
190	QC21-SA	4 Ea	10/31/17	0.00	0.00	QC21	

Part Op 100 - Cut Blank at 19.500" *** ONE BLANK MAKES TWO PARTS***

Descriptions: 110 - 1-Machine per folio FB222 DWG REV: FOLIO REV: 2- deburr and break all sharp edges

120 - QC2- Inspect parts off machine FAI/FAIB

130 - QC8- Inspect parts - second check

140 - Outsource process-Anodize per QSI017 4.1.10.1 Issue P/O to ATG : AS PER MPP-172 SECTION

2.1, HARD ANODIZE COLOR BLACK, PER IAW MIL-A-8625 TYPE 3 CLASS 2 AS PER MPP-172 SECTION 4.2, PRIME AS PER IAW MIL-PRF-23377 TYPE 1 CLASS N, 1-2 MIL MAX Certification of Conformity is required

150 - Receive & Inspect for Damage & Mat'l Certs

155 - QC5- Inspect part completeness to step on W/O

180 - Identify as per dwg & Stock Location:

190 - QC21- Final Inspection - Work Order Release

2.7 mils thickness primer

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	M7075T6S.375X5.000	3	1	0	0

Part Specifications

Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Lower Cutter Deflector	0.340Inches + 0.000 - 0.003	0.340 0.337		
2	Lower Cutter Deflector	0.040Inches ± 0.030	0.070 0.010		
3	Lower Cutter Deflector	45.0Degrees ± 0.5	45.5 44.5		

DART
AEROSPACE

S004250

S004479



Lower Cutter Deflector

PART NO: D4842-1
Revision:
Operation:
Quantity: 5
Change No:

Outsource

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K64 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Mfg Date: 10/31/17
Job No: 164956

Status: Stock

Part: **D4842-1 B164956**

Created: 9/30/17 1:29 PM DART.LAJEUNESSE.MARIE



Serial No: **S000268**

Printed By: Goldston, Justin 10/2/17 10:45 AM

4	Lower Cutter Deflector	0.700Inches $\pm$ 0.030	0.730 0.670	
5	Lower Cutter Deflector	8.650Inches $\pm$ 0.030	8.680 8.620	
6	Lower Cutter Deflector	0.380Inches $\pm$ 0.030	0.410 0.350	
7	Lower Cutter Deflector	0.177Inches $\begin{matrix} + 0.005 \\ - 0.001 \end{matrix}$	0.182 0.176	
8	Lower Cutter Deflector	0.320Inches $\pm$ 0.030	0.350 0.290	
9	Lower Cutter Deflector	0.630Inches $\pm$ 0.030	0.660 0.600	
10	Lower Cutter Deflector	0.970Inches $\pm$ 0.030	1.000 0.940	Radius
11	Lower Cutter Deflector	2.110Inches $\pm$ 0.005	2.115 2.105	
12	Lower Cutter Deflector	2.110Inches $\pm$ 0.005	2.115 2.105	
13	Lower Cutter Deflector	0.250Inches $\pm$ 0.030	0.280 0.220	Radius
14	Lower Cutter Deflector	0.130Inches $\pm$ 0.030	0.160 0.100	
15	Lower Cutter Deflector	45.0Degrees $\pm$ 0.5	45.5 44.5	

Plex 10/6/17 8:39 AM Dart.lajeunesse.marie

Work Order ID 164956

Thursday, August 10, 2017 12:52:16 PM

164956

Ship Sept 29
U/R

Page 1

Item ID: D4842-1

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Lower Cutter Deflector

Start Date: 8/21/2017 Start Qty: 4.00

4

Cust Item ID:

Required Date: 9/7/2017 Req'd Qty: 4.00

4

Customer:

Reference:

17/08/10 manufacturer to concision 400000061786

Approvals: Process Plan:

Date: AUG 10 2017 Tooling:

Date:

Run Start *NR1*

QC:

Date: SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D4842

B

100

0.00

100

Bandsaw

Memo

0.00

Jeaspa Bandsaw

Cut Blank at 19.500"

*** ONE BLANK MAKES TWO PARTS ***

4 10 DAS 1st 9-89 17-08-23

110

2.12

110

HAAS I

Memo

0.68

HAAS CNC vertical machine #1

1-Machine per folio FB222

DWG REV: B

FOLIO REV: B

2- deburr and break all sharp edges

5 1 1 S.C. 17/08/24 DAS 14 9-89 17-08-23

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: <u>164956</u> Part No. <u>D4842-1</u> NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☒		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging Supplier ☐ Engineering Quality ☐ Other ☐					
Date: <u>17/08/24</u>		Step #: <u>1</u>		QTY Effective: <u>1</u>		MRB (QSI042) Approval DAS 9 9-89 <u>17-08-29</u>			
Description Work Order Deviation .340 measurement fell undersize due to material warping measurement is .332" to .337"				Disposition Raised Z axis to compensate Destroyed Scrap and replaced				Completed By <u>SC</u>	
				Lead hand / Supervisor Approval Verification DAS 14 9-89 <u>17/08/29</u>					
				QC / QA Coordinator Approval DAS 9 9-89 <u>17-08-29</u>					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☒ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☒ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☒ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mis-labeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : _____							

Work Order ID 164956

Thursday, August 10, 2017 12:52:17 PM

164956

Page 2

Item ID: D4842-1

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Lower Cutter Deflector

Start Date: 8/21/2017 Start Qty: 4.00 ***4***

Cust Item ID:

Required Date: 9/7/2017 Req'd Qty: 4.00 ***4***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC2- Inspect parts off machine FAI/FAIB	0.00				5	1	1	S.C. 17/08/24
120									
QC	Memo	0.00							
Quality Control									
130	QC8- Inspect parts - second check	0.00				5			DAS 39 9-89 17-09-12
130									
QC	Memo	0.00							
Quality Control									
140	Outsource process-Anodize per QSI017 4.1.10.1	0.00				5			SEP 15 2017
140									
Outsource4	Memo	0.00							
Outsource process - Anodize	Issue P/O to ATG : 39769								
	1- Black Anodize as per Dwg D4842								
	2- PRIME AS PER DWG, SEE NOTE #2								
	Certification of Conformity is required								

SEP 15 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐									
Date : <u>17-09-01</u>		Step #: <u>100</u>		QTY Effective : <u>4</u>			MRB (QSI042) Approval						
Description Work Order Deviation Grain direction is not to drawing. grain is 45° grain run on 45° with the part D.T.9				Disposition PART BUILT UNDER LICENCE WITH OEM. CORRECTIVE ACTION IS TO SUBMIT CONCESSION ACCORDING TO LEONARDO HELICOPTER QUALITY DOCUMENT QRS 107				Completed By <u>[Signature]</u> Lead hand / Supervisor Approval Verification DAS 9 9-89 <u>17-09-01</u>					
Root Cause <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;"> Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☒ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ </td> <td style="width:50%;"> No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐ </td> </tr> </table>				Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☒ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	FAULT CATEGORY <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:33%;"> Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ </td> <td style="width:33%;"> Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ </td> <td style="width:33%;"> Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ </td> <td style="width:33%;"> Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐ </td> </tr> </table>				Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☒ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐												
Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐										
OTHER : _____													

Work Order ID 164956

Thursday, August 10, 2017 12:52:17 PM

164956

Page 3

Item ID: D4842-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Lower Cutter Deflector

Start Date: 8/21/2017 Start Qty: 4.00

4

Cust Item ID:

Required Date: 9/7/2017 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Receive & Inspect for Damage & Mat'l Certs	0.00							
150									
Packaging	Memo	0.00							
Packaging									
155	QC5- Inspect part completeness to step on W/O	0.00							
155									
QC	Memo	0.00							
Quality Control									
180	Identify as per dwg & Stock Location: _____	0.00							
180									
Packaging	Memo	0.00							
Packaging									

5x SPT 70-30

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
				Completed By					
				Lead hand / Supervisor Approval Verification					
				QC / QA Coordinator Approval					

Root Cause				FAULT CATEGORY			
Environment ☐		No Re-verification ☐		Pressure/Forced ☐		Temperature/Cure ☐	
Design ☐		Operator ☐		Bending ☐		Set-up ☐	
Doc/Data ☐		Offset/Setup ☐		Centre Not Concentric ☐		BOM/Route ☐	
Equip/Tooling ☐		Supplier ☐		Cracks ☐		Broken/Damage/Defect ☐	
Handling/Pre ☐		Training ☐		Crimp/Kink/Ripple/Wave ☐		Inspection Incomplete/Unqualified ☐	
Material ☐		Use for Testing ☐		Cuffs ☐		Contamination ☐	
Internal Transport ☐		Poor Information ☐		Crushing ☐		Countersink ☐	
Tribal Knowledge ☐		Rushing ☐		Heat Treat ☐		Cut Too Short ☐	
LOA ☐		Product Improvement ☐		Wave/Twist in Tube ☐		Instructions Incomplete/Unclear ☐	
Substation ☐		Process Improvement ☐		Marks/Chatter ☐		Drill Holes ☐	
Past Expiry Date ☐		Manufacturing Process ☐		OTHER : _____			
Misidentified ☐		Past Due ☐					

Work Order ID 164956

Thursday, August 10, 2017 12:52:17 PM

164956

Page 4

Item ID: D4842-1**Accept*****N900040100*****Setup Start*****NS1*****Revision ID:****Stop *NS2*****Item Name:** Lower Cutter Deflector**Start Date:** 8/21/2017 **Start Qty:** 4.00***4*****Cust Item ID:****Required Date:** 9/7/2017 **Req'd Qty:** 4.00***4*****Customer:****Reference:****Approvals:** **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____**Run Start*****NR1*****QC:** _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____**Stop*****NR2*****Sequence ID/
Work Center ID****Operation
Description****Set Up/
Run Hours****Tool ID****Tool #****Plan
Code****Accept
Qty****Reject
Qty****Reject
Number****Insp.
Stamp**

190

QC21- Final Inspection - Work Order Release

0.00

190

QC

Memo

0.00

Quality Control

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Picklist Print

Thursday, August 10, 2017 12:52:16 PM

Page 1

Work Order ID: 164956

164956

Parent Item: D4842-1

D4842-1

Parent Item Name: Lower Cutter Deflector

Start Date: 8/21/2017

Required Date: 9/7/2017

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP REV:A 13.04.26 NEW ISSUE DD VERF:JLM IPP
REV:B PROCESS CHANGE 13/10/29 JFS VERIFY BY: JLM IPP Rev.C
17.06.27 Change Mat. as per ECN17-574 DP verify DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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M7075T6S.375X5.000

Purchased

No

100

f

26.5550

0.813

3.423158

M7075T6S 375X5 000

**

DAS

1st

17.08.23

7075-T6 Sheet .375" Thick Plate x 5" Wide

9-89

Location

Loc Qty

Loc Code

MAT005

26.555

m134829

3.291

m135320

1

m136103

0.875

m136303

0.917

m136965

0.698

m137561

2.777

m137781

0.147

→ m138086

16.85

3.257

4 1.625 S.C
17/08/24

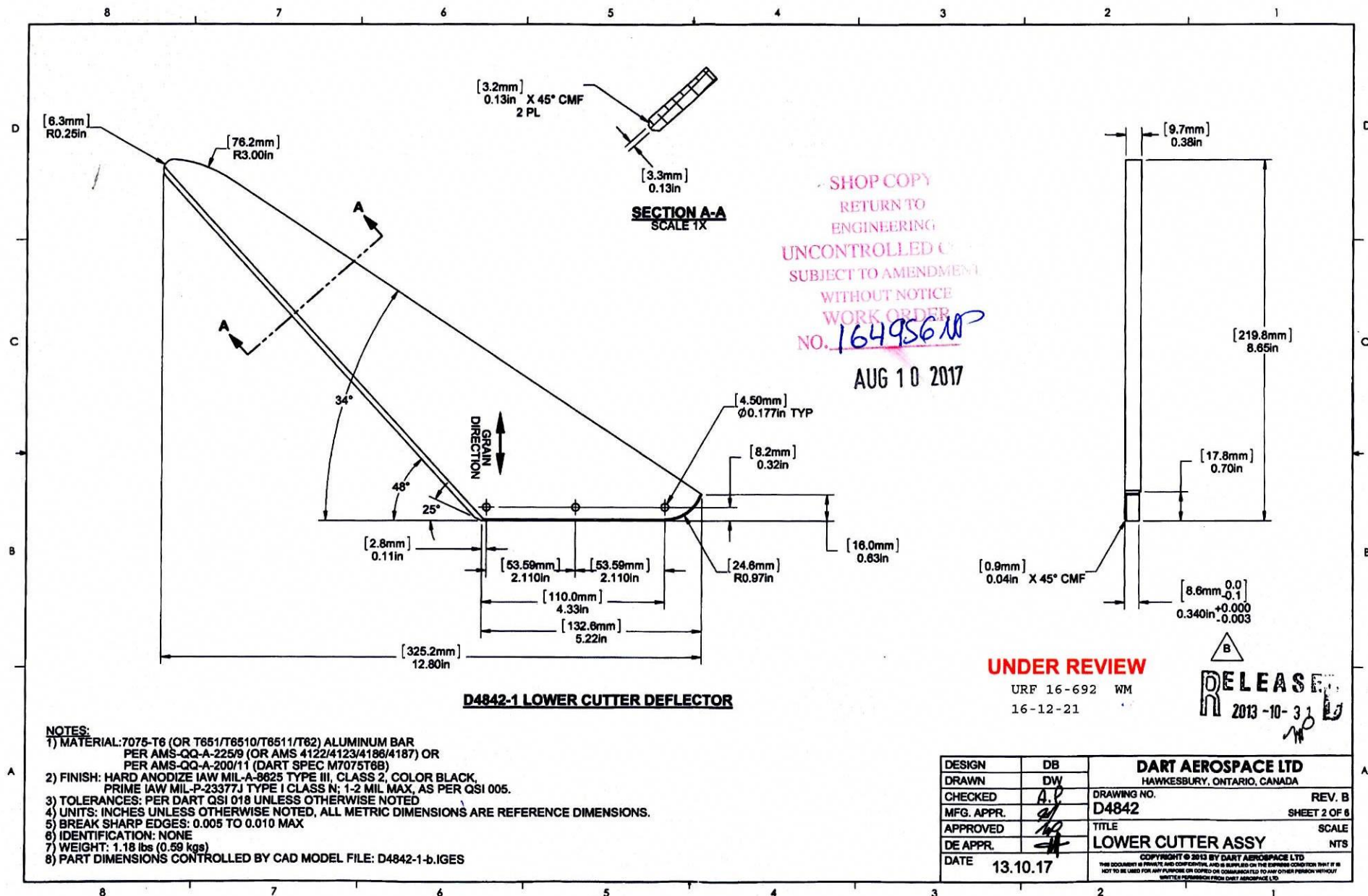
DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								



PRINTING DATE AND STATUS 14.02.2017 Assigned to QC repair result



Supplier Concession

PAGE
2 of 2

PLANT
Leonardo Helic. - Vergiate

Supplier NC N.	AWC 006/01	Date	02.02.2017	AW	400000061786	Purchase Order	4801373666
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DEFECT 0001

FO01

Wrong dimensions

attachment

Manuf. Doc. N.	AWC 006	Date		AW Doc. N.		Purchase Order	4800671131 4800722284 4801147764 4801186922 4801218851 4801288960 4801373666
AW P/N	6F9540V00231	S/N / Batch Number	B109195 Qty. (1) B133355 Qty. (2) B134314 Qty. (1) B134315 Qty. (1) B134842 Qty. (1) B137492 Qty. (1) B137355 Qty. (2) B137816 Qty. (1) B137818 Qty. (1) B137817 Qty. (1) B140379 Qty. (3) B140381 Qty. (2) B147002 Qty. (2) B150786 Qty. (1)	Grade	A	AW Drawing Issue	B

Description	Lower Cutter Assy	Batch Qty	20	Defective Qty	20
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Manufacturer	Dart Aerospace	Model	AW169
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Defect(s) Description

Leonardo has informed Dart that there are interference issues installing the lower cable cutter D4842-041 onto the Leonardo interface bracket.

Department	Inspector	Signature	Date
Quality	DAS 16 9-89		2017/02/01

Defect(s) Cause

The Lower Cutter body has a dimension of 10.9 +0.25/-0.00 mm. This dimension was reported as part of the approved FAI and has been met with all delivered product.

Department	Inspector	Signature	Date
Quality	DAS 16 9-89		2017/02/01

Corrective Action

Complete Before

In order to mitigate the interference issue for Leonardo, Dart is proposing to remove sufficient material to make the overall installation dimension at 22.15 mm +0.05/-0.35.

Department	Inspector	Signature	Date
Quality	DAS 16 9-89		2017/02/01

For "MANUFACTURER" SUPPLIERS ONLY
ENGINEERING evaluation and proposal

Engineering evaluation

 Investigation report
 Compliance report

 n.....
 n.....

Dart's position is that this change will not impact the structural substantiation presented in Report DA169-4 for the lower cutter body since this is not a section with the lowest margin. Therefore removing 0.3 mm max from each part will not impact the structural integrity of the lower cutter assembly. The dimension on the cutter body part D4842-3/-4 will be 10.80 +0.00/-0.200.

The dimension change of the two lower cutter body parts mating, plus the sealant, anodize and primer layers will be defined as a dimension of 22.15 +0.05/-0.35 mm on the assembled lower cutterbody and will be incorporated into the D4842 drawing for inspection.

	Defect effects		Limitations
	Before any repair	After any repair	
Safety	☐ yes	☐ yes ☐ no	☐ yes (specify) ☒ no
Life	☐ yes	☐ yes ☐ no	
Strength	☐ yes	☐ yes ☐ no	
Performances	☐ yes	☐ yes ☐ no	
Interchangeability	☐ yes	☐ yes ☐ no	
Reliability	☐ yes	☐ yes ☐ no	
Maintainability	☐ yes	☐ yes ☐ no	
Installability	☒ yes	☐ yes ☒ no	
Testability	☐ yes	☐ yes ☐ no	
Only aspect	☐ yes	☐ yes ☐ no	
Repair Proposal None		Decision to use ☐ Use repaired with specific repair ☐ Use repaired with known repair ☐ Use as is ☐ Use repaired for tests (see Limitations) ☐ Use as is for tests (see Limitations) ☒ Scrap	
Concession Classification		☒ Major ☐ Minor Submit after repair ☐ yes ☐ no	



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038153

Supplier: ATG001-VC
A.T.G. Industries Inc
731 INDUSTRIELLE ROAD
ROCKLAND
ON
K4K 1T2 Canada
Phone: 613-446-4544
Fax: 613-446-4556

Attention: Lalande, Marc-Andre

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: PO038153
PO Date: 10/26/17
Due Date:
Purchase Order
Revision:
Revision Date:
Ship-To Contact: Phone:

Via: Ground
Pynt Terms: Net 30
Freight Terms:
Special Comments:

Items												
Line Item	Job	Part	Rev	Description	Item Tax	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1		D4842-1	-	Lower Cutter Deflector Hard Anodize color Black, Prime		Firmed	10/26/17	5 pcs	0 pcs	5 pcs	\$14.13333/pcs	\$70.67
2	165444	RB877528-4-3	-	Handle Issue P/O to ATG: ANODIZE COLOR BLACK, PER IAW MIL- A-8625F TYPE 2 CLASS 2		Firmed		1 pcs	0 pcs	1 pcs	\$13.44/pcs	\$13.44
3	165599	647.4110	-	Doubler Issue P/O to ATG : 1- Black Anodize as per Dwg 647.4100		Firmed	10/26/17	6 pcs	0 pcs	6 pcs	\$25.3333/pcs	\$152.00
4	165845	D5155-043	-	Co-Pilot Collective Head Assembly (212/412)		Firmed	10/26/17	2 pcs	0 pcs	2 pcs	\$13.44433/pcs	\$26.89
5	165846	D5155-045	-	Co-Pilot Collective Head Assembly (Eagle Single) Issue P/O to ATG: Black Anodize as per Dwg D5155 C OF C REQUIRED		Firmed	10/26/17	1 pcs	0 pcs	1 pcs	\$13.4433/pcs	\$13.44
6	165431	RBEM533V5000101-3	-	Handle -Issue P/O to ATG: -ANODIZE COLOR BLACK, PER IAW MIL- A-8625F TYPE 2 CLASS 2 - Certificate of Conformity is required		Firmed	10/26/17	1 pcs	0 pcs	1 pcs	\$13.4433/pcs	\$13.44
7	165025	RBEM533V5000101-5	-	Plug -Issue P/O to ATG: -ANODIZE COLOR		Firmed	10/26/17	4 pcs	0 pcs	4 pcs	\$13.4433/pcs	\$53.77



A.T.G. Industries Inc.
731 Industrielle Street
Rockland, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 913990

Date: 11-Oct-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
		OUR TRUCK	
Quantity	Description		
	Please reference this document's Pack List number on all correspondences regarding this shipment. If you have any questions, please contact us.		
5 ea	Part: D4842-1 Lower Cutter Deflector Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0001-.0002" (1 - 2 mils) per drawing. Job: 21718	Rev: B PO: PO37769	Line: 1
10 ea	Part: 649.4818 Shim Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 21730	Rev: C PO: PO37769	Line: 13
20 ea	Part: 649.4819 Shim Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 21731	Rev: C PO: PO37769	Line: 14
8 ea	Part: 646.9813 Lower Deflector Low Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0001-.0002" (1 - 2 mils) per drawing. Job: 21732	Rev: A PO: PO37769	Line: 15
1 ea	Part: ADMINISTRATION FEE Administrative Fee Job: 21808	Rev: N/A PO: PO37769	Line: 16-17
	Made in Canada.		



A.T.G. Industries Inc.
731 Industrielle Street
Rockland, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 913990

Date: 11-Oct-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
		OUR TRUCK	
Quantity	Description		
6 ea	Part: 647.4110 Doubler Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 21726	Rev: N/C3	PO: PO37769 Line: 9
CERTIFICATE OF CONFORMANCE A.T.G Industries Inc. certifies that all items in this shipment conform to the requirements. Date: <u>11/10/17</u> Certified Signature: <u>[Signature]</u> Receiver Signature: <u>SP 17-10-30</u> A.T.G Industries Inc. is AS9100 Registered and Nadcap Chemical Processing Accredited. Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.			
Made in Canada.			